

INOP COMPONENTS

10098

INOPERATIVE COMPONENTS OR VISUAL AIDS TABLE

Landing minimums published on instrument approach procedure charts are based upon full operation of all components and visual aids associated with the particular instrument approach chart being used. Higher minimums are required with inoperative components or visual aids as indicated below. If more than one component is inoperative, each minimum is raised to the highest minimum required by any single component that is inoperative. ILS glide slope inoperative minimums are published on the instrument approach charts as localizer minimums. This table may be amended by notes on the approach chart. Such notes apply only to the particular approach category(ies) as stated. See legend page for description of components indicated below.

(1) ILS, MLS, PAR and RNAV (LPV line of minima)

Inoperative Component or Aid	Approach Category	Increase Visibility
ALSF 1 & 2, MALSR, & SSALR	ABCD	¼ mile

(2) ILS with visibility minimum of 1,800 RVR

ALSF 1 & 2, MALSR, & SSALR	ABCD	To 4000 RVR
TDZL RCLS	ABCD	To 2400 RVR*
RVR	ABCD	To ½ mile

\*1800 RVR authorized with the use of FD or AP or HUD to DA.

(3) VOR, VOR/DME, TACAN, LOC, LOC/DME, LDA, LDA/DME, SDF, SDF/DME, GPS, ASR and RNAV (LNAV/VNAV and LNAV line of minima)

Inoperative Visual Aid	Approach Category	Increase Visibility
ALSF 1 & 2, MALSR, & SSALR	ABCD	½ mile
SSALS, MALS, & ODALS	ABC	¼ mile

(4) NDB

ALSF 1 & 2, MALSR, & SSALR	C	½ mile
MALS, SSALS, ODALS	ABD	¼ mile
	ABC	¼ mile

CORRECTIONS, COMMENTS AND/OR PROCUREMENT

FOR CHARTING ERRORS,  
OR FOR CHANGES, ADDITIONS,  
RECOMMENDATIONS ON  
PROCEDURAL ASPECTS CONTACT:

FAA, National Aeronautical Navigation Services  
SSMC-4, Sta. #4259  
1305 East West Highway  
Silver Spring, MD 20910-3281  
Telephone 1-800-626-3677  
Email 9-AMC-Aerochart@faa.gov

FOR PROCUREMENT CONTACT:

FAA, National Aeronautical Navigation Services  
REDIS/Distribution Team  
10201 Good Luck Road  
Glenn Dale, MD 20769-9700  
Online at <http://aeronav.faa.gov>  
Email 9-AMC-Chartsales@faa.gov  
Telephone 1-800-638-8972  
Fax 301-436-6829  
or any authorized chart agent

Frequently asked questions (FAQ) are answered on our website at <http://aeronav.faa.gov>. See the FAQs prior to contact via toll free number or email.

Request for the creation or revisions to Airport Diagrams should be in accordance with FAA Order 7910.4.

INOP COMPONENTS

06 MAY 2010 to 03 JUN 2010

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09071

# TERMS/LANDING MINIMA DATA

## IFR LANDING MINIMA

The United States Standard for Terminal Instrument Procedures (TERPS) is the approved criteria for formulating instrument approach procedures. Landing minima are established for six aircraft approach categories (ABCDE and COPTER). In the absence of COPTER MINIMA, helicopters may use the CAT A minimums of other procedures. The standard format for RNAV minima and landing minima portrayal follows:

### RNAV (GPS) MINIMA

CATEGORY	A	B	C	D
LPV DA	1540/24 258 (300-½)			
LNAV/VNAV DA	1600/24	318 (400-½)	1600/40 318 (400-¾)	
LNAV MDA	1840/24	558 (600-½)	1840/50 558 (600-1)	1840/60 558 (600-1 ¼)
CIRCLING	1840-1	545 (600-1)	1840-1½ 545 (600-1½)	1860-2 565 (600-2)

NOTE: The **W** symbol indicates outages of the WAAS vertical guidance may occur daily at this location due to initial system limitations. WAAS NOTAMS for vertical outages are not provided for this approach. Use LNAV minima for flight planning at these locations, whether as a destination or alternate. For flight operations at these locations, when the WAAS avionics indicate that LNAV/VNAV or LPV service is available, then vertical guidance may be used to complete the approach using the displayed level of service. Should an outage occur during the procedure, reversion to LNAV minima may be required. As the WAAS coverage is expanded, the **W** will be removed.

RNAV minimums are dependent on navigation equipment capability, as stated in the applicable AFM, AFMS, or other FAA approved document, and as outlined below.

### GLS (Global Navigation Satellite System (GNSS) Landing System)

The GLS (NA) minima line will be removed from existing RNAV (GPS) approach charts when LPV minima is published.

### LPV (An Approach Procedure with Vertical Guidance (APV) based on WAAS lateral and vertical guidance)

Must have WAAS avionics approved for LPV approach.

### LNAV/VNAV (Lateral navigation/Vertical navigation)

Must have either:

- a.) WAAS avionics approved for LNAV/VNAV approach, or
- b.) A certified Baro-VNAV system with an IFR approach approved GPS, or
- c.) A certified Baro-VNAV system with an IFR approach approved WAAS, or
- d.) An approach certified RNP-0.3 system with barometric vertical guidance (Baro-VNAV).

Other RNAV systems require special approval.

NOTES:

- 1. LNAV-VNAV minima not applicable for Baro-VNAV equipment if chart is annotated "Baro-VNAV NA" or when below the minimum published temperature, e.g., Baro-VNAV NA below -17°C (2°F).
- 2. DME/DME based RNP-0.3 systems may be used only when a chart note indicates DME/DME availability; e.g., "DME/DME RNP-0.3 Authorized." Specific DME facilities may be required; e.g., "DME/DME RNP-0.3 Authorized. ABC, XYZ required."

### LNAV (Lateral navigation)

Must have IFR approach approved GPS, WAAS, or RNP-0.3 system. Other RNAV systems require special approval.

NOTE: DME/DME based RNP-0.3 systems may be used only when a chart note indicates DME/DME availability; e.g., "DME/DME RNP-0.3 Authorized." Specific DME facilities may be required; e.g., "DME/DME RNP-0.3 Authorized. ABC, XYZ required."

### LANDING MINIMA FORMAT

In this example airport elevation is 1179, and runway touchdown zone elevation is 1152.

		Visibility (RVR 100's of feet)		Aircraft Approach Category HAT/HATH	
CATEGORY	A	B	C	D	
Straight-in ILS to Runway 27	DA	1352/24	200	(200-½)	
Straight-in with Glide Slope Inoperative or not used to Runway 27		1440/24	288	(300-½)	1440/50 288 (300-1)
		1540-1 361 (400-1)	1640-1 461 (500-1)	1640-1½ 461 (500-1½)	1740-2 561 (600-2)
		MDA	HAA	Visibility in Statute Miles	

All weather minimums in parentheses not applicable to Civil Pilots. Military Pilots refer to appropriate regulations.

# TERMS/LANDING MINIMA DATA

TERMS/LANDING MINIMA DATA

COPTER MINIMA ONLY

CATEGORY	COPTER		
H-176°	680-½	363	(400-½)

Copter Approach Direction

Height of MDA/DA Above Landing Area (HAL)

No circling minima are provided

RADAR MINIMA

	RWY	GS/TCH/RPI	CAT	DA/ MDA-VIS	HAT/ HATH/ HAA	CEIL-VIS	CAT	DA/ MDA-VIS	HAT/ HATH/ HAA	CEIL-VIS
PAR (c)	10	2.5°/42/1000	ABCDE	195/16	100	(100-¼)				
(d)	28	2.5°/48/1068	ABCDE	187/16	100	(100-¼)				
ASR	10		ABC	560/40	463	(500-¾)	D	560/50	463	(500-1)
			E	580/60	463	(500-1¼)				
	28		AB	600/50	513	(600-1)	C	600/60	513	(600-1¼)
			DE	600-1½	513	(600-1½)				
CIR (b)	10		AB	560-1¼	463	(500-1¼)	C	560-1½	463	(500-1½)
	28		AB	600-1¼	503	(600-1¼)	C	600-1½	503	(600-1½)
	10, 28		DE	660-2	563	(600-2)				

Radar Minima:

- 1. Minima shown are the lowest permitted by established criteria. Pilots should consult applicable directives for their category of aircraft.
- 2. The circling MDA and weather minima to be used are those for the runway to which the final approach is flown- not the landing runway. In the above RADAR MINIMA example, a category C aircraft flying a radar approach to runway 10, circling to land on runway 28, must use an MDA of 560 feet with weather minima of 500-1½.
- ▲ Alternate Minima not standard. Civil users refer to tabulation. USA/USN/USAF pilots refer to appropriate regulations.
- ▲ NA Alternate minima are Not Authorized due to unmonitored facility or absence of weather reporting service.
- ▼ Take-off Minima not standard and/or Departure Procedures are published. Refer to tabulation.

AIRCRAFT APPROACH CATEGORIES

Aircraft approach category indicates a grouping of aircraft based on a speed of VREF, if specified, or if VREF not specified, 1.3 VSO at the maximum certificated landing weight. VREF, VSO, and the maximum certificated landing weight are those values as established for the aircraft by the certification authority of the country of registry. Helicopters are Category A aircraft. An aircraft shall fit in only one category. However, if it is necessary to operate at a speed in excess of the upper limit of the speed range for an aircraft's category, the minima for the category for that speed shall be used. For example, an airplane which fits into Category B, but is circling to land at a speed of 145 knots, shall use the approach Category D minima. As an additional example, a Category A airplane (or helicopter) which is operating at 130 knots on a straight-in approach shall use the approach Category C minima. See following category limits:

MANEUVERING TABLE

Approach Category	A	B	C	D	E
Speed (Knots)	0-90	91-120	121-140	141-165	Abv 165

Comparable Values of RVR and Visibility

The following table shall be used for converting RVR to ground or flight visibility. For converting RVR values that fall between listed values, use the next higher RVR value; do not interpolate. For example, when converting 1800 RVR, use 2400 RVR with the resultant visibility of 1/2 mile.

RVR	Visibility (statute miles)	RVR (feet)	Visibility (statute miles)
1600	¼	4500	¾
2400	½	5000	1
3200	¾	6000	1¼
4000	¾		

TERMS/LANDING MINIMA DATA

THE RATE OF CLIMB TABLE HAS BEEN  
INTENTIONALLY REMOVED.

PLEASE SEE THE INSIDE  
BACK COVER PAGE FOR  
THE COMBINED  
CLIMB/DESCENT TABLE.



GENERAL INFORMATION

This publication is issued every 56 days and includes Standard Instrument Approach Procedures (SIAPs), Standard Instrument Departures (SIDs), Standard Terminal Arrivals (STARs), IFR Take-off Minimums and (Obstacle) Departure Procedures (ODPs), IFR Alternate Minimums, and Radar Instrument Approach Minimums for use by civil and military aviation. The organization responsible for SIAPs, Radar Minimums, SIDs, STARs and graphic ODPs is identified in parentheses in the top margin of the procedure; e.g., (FAA), (USA), (USAF), (USN). SIAPs with the (FAA) designation are regulated under 14 CFR, Part 97. See 14 CFR, Part 91.175 (a) and the AIM for further details. 14 CFR, Part 91.175 (g) and the Special Notices section of the Airport/Facility Directory contains information on civil operations at military airports.

STANDARD TERMINAL ARRIVALS AND DEPARTURE PROCEDURES

The use of the associated codified STAR/DP and transition identifiers are requested of users when filing flight plans via teletype and are required for users filing flight plans via computer interface. It must be noted that when filing a STAR/DP with a transition, the first three coded characters of the STAR and the last three coded characters of the DP are replaced by the transition code. Examples: ACTON SIX ARRIVAL, file (AQN.AQN6); ACTON SIX ARRIVAL, EDNAS TRANSITION, file (EDNAS.AQN6). FREEHOLD THREE DEPARTURE, file (FREH3.RBV), FREEHOLD THREE DEPARTURE, ELWOOD CITY TRANSITION, file (FREH3.EWC).

**RNAV DP and STAR.** Effective March 15, 2007, these procedures, formerly identified as Type-A and Type-B, will be designated as RNAV 1 in accordance with amended Advisory Circular (AC) and ICAO terminology.

Refer to AC 90-100A U.S. TERMINAL AND EN ROUTE AREA NAVIGATION (RNAV) OPERATIONS and the Aeronautical Information Manual for additional guidance regarding these procedures.

Standard RNAV 1 Procedure Chart Notes

- NOTE: RNAV 1  
NOTE: DME/DME/IRU or GPS required




Some procedures may require use of GPS and will be identified by a "GPS required" note.

RNAV 1 Procedure Characteristics and Operations

- 1. Require use of an RNAV system with DME/DME/IRU, and/or GPS inputs.
- 2. Require use of a CDI, flight director, and/or autopilot, in lateral navigation mode, for flight guidance while operating on RNAV paths (track, course, or direct leg). Other methods providing an equivalent level of performance may be acceptable.
- 3. RNAV paths may start as low as 500 feet above airport elevation.



PILOT CONTROLLED AIRPORT LIGHTING SYSTEMS

Available pilot controlled lighting (PCL) systems are indicated as follows:

1. Approach lighting systems that bear a system identification are symbolized using negative symbology, e.g., , , .

2. Approach lighting systems that do not bear a system identification are indicated with a negative "0" beside the name.

A star (★) indicates non-standard PCL, consult Directory/Supplement, e.g., 0★

To activate lights, use frequency indicated in the communication section of the chart with a 0 or the appropriate lighting system identification e.g., UNICOM 122.8 0, , 

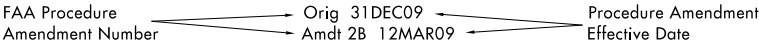
KEY MIKE	FUNCTION
7 times within 5 seconds	Highest intensity available
5 times within 5 seconds	Medium or lower intensity (Lower REIL or REIL-off)
3 times within 5 seconds	Lowest intensity available (Lower REIL or REIL-off)

CHART CURRENCY INFORMATION

Date of Latest Revision

09365

The Date of Latest Revision identifies the Julian date the chart was added or last revised for any reason. The first two digits indicate the year, the last three digits indicate the day of the year (001 to 365/6) in which the latest revision of any kind has been made to the chart.



The FAA Procedure Amendment Number represents the most current amendment of a given procedure. The Procedure Amendment Effective Date represents the AIRAC cycle date on which the procedure amendment was incorporated into the chart. Updates to the amendment number & effective date represent procedural/criteria revisions to the charted procedure, e.g., course, fix, altitude, minima, etc.

NOTE: Inclusion of the "Procedure Amendment Effective Date" will be phased in as procedures are amended. As this occurs, the Julian date will be relocated to the upper right corner of the chart.

MISCELLANEOUS

- ★ Indicates a non-continuously operating facility, see A/FD or flight supplement.
- "Radar required" on the chart indicates that radar vectoring is required for the approach.
- Distances in nautical miles (except visibility in statute miles and Runway Visual Range in hundreds of feet). Runway Dimensions in feet. Elevations in feet. Mean Sea Level (MSL). Ceilings in feet above airport elevation. Radials/bearings/headings/courses are magnetic. Horizontal Datum: Unless otherwise noted on the chart, all coordinates are referenced to North American Datum 1983 (NAD 83), which for charting purposes is considered equivalent to World Geodetic System 1984 (WGS 84).
- Terrain is scaled within the neat lines (planview boundaries) and does not accurately underlie not-to-scale distance depictions or symbols.

ADF.....	Automatic Direction Finder	INT.....	Intersection
ALS.....	Approach Light System	LDA.....	Localizer Type Directional Aid
ALSF.....	Approach Light System with Sequenced Flashing Lights	Ldg.....	Landing
AP.....	Autopilot System	LDIN.....	Lead in Light System
APCH.....	Approach	LRL.....	Low Intensity Runway Lights
APP CON.....	Approach Control	LOC.....	Localizer
ARR.....	Arrival	LR.....	Lead Radial. Provides at least 2 NM (Copter 1 NM) of lead to assist in turning onto the intermediate/final course.
ASOS.....	Automated Surface Observing System	MALS.....	Medium Intensity Approach Light System
ASR/PAR.....	Published Radar Minimums at this Airport	MALSRR.....	Medium Intensity Approach Light System with RAIL
ATIS.....	Automatic Terminal Information Service	MAP.....	Missed Approach Point
AWOS.....	Automated Weather Observing System	MDA.....	Minimum Descent Altitude
AZ.....	Azimuth	MIRL.....	Medium Intensity Runway Lights
BC.....	Back Course	MLS.....	Microwave Landing System
BND.....	Bound	MM.....	Middle Marker
C.....	Circling	N/A.....	Not Applicable
CAT.....	Category	NA.....	Not Authorized
CCW.....	Counter Clockwise	NDB.....	Non-directional Radio Beacon
Chan.....	Channel	NFD.....	National Flight Database
CLNC DEL.....	Clearance Delivery	NM.....	Nautical Mile
CNF.....	Computer Navigation Fix	NoPT.....	No Procedure Turn Required (Procedure Turn shall not be executed without ATC clearance)
CTAF.....	Common Traffic Advisory Frequency	ODALS.....	Omnidirectional Approach Light System
CW.....	Clockwise	ODP.....	Obstacle Departure Procedure
DA.....	Decision Altitude	OM.....	Outer Marker
DER.....	Departure End of Runway	PRM.....	Precision Runway Monitor
DH.....	Decision Height	R.....	Radial
DME.....	Distance Measuring Equipment	RA.....	Radio Altimeter setting height
ELEV.....	Elevation	RAIL.....	Runway Alignment Indicator Lights
EMAS.....	Engineered Material Arresting System	RCLS.....	Runway Centerline Light System
FAF.....	Final Approach Fix	REIL.....	Runway End Identifier Lights
FD.....	Flight Director System	RF.....	Radius-to-Fix
FM.....	Fan Marker	RNAV.....	Area Navigation
FMS.....	Flight Management System	RNP.....	Required Navigation Performance
GCO.....	Ground Communications Outlet	RPI.....	Runway Point of Intercept(ion)
GPI.....	Ground Point of Interception	RRL.....	Runway Remaining Lights
GPS.....	Global Positioning System	Rwy.....	Runway
GS.....	Glide Slope	RVR.....	Runway Visual Range
HAA.....	Height above Airport	S.....	Straight-in
HAL.....	Height above Landing	SALS.....	Short Approach Light System
HAT.....	Height above Touchdown	SSALR.....	Simplified Short Approach Light System with RAIL
HATH.....	Height Above Threshold	SDF.....	Simplified Directional Facility
HGS.....	Head-up Guidance System	TAA.....	Terminal Arrival Area
HIRL.....	High Intensity Runway Lights		
HUD.....	Head-up Display		
IAF.....	Initial Approach Fix		
ICAO.....	International Civil Aviation Organization		
IF.....	Intermediate Fix		
IM.....	Inner Marker		

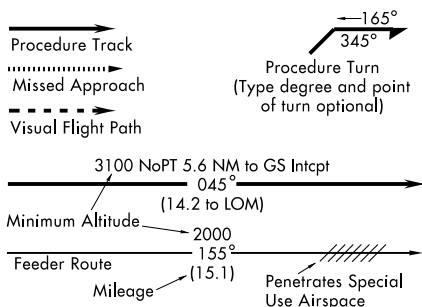
TAC.....	TACAN
TCH.....	Threshold Crossing Height (height in feet Above Ground level)
TDZ.....	Touchdown Zone
TDZE.....	Touchdown Zone Elevation
TDZ/CL.....	Touchdown Zone and Runway Centerline Lighting
TDZL.....	Touchdown Zone Lights
THR.....	Threshold
THRE.....	Threshold Elevation
TODA.....	Take-off Distance Available
TORA.....	Take-off Run Available
VASI.....	Visual Approach Slope Indicator
VDP.....	Visual Descent Point
VGSI.....	Visual Glide Slope Indicator
WP/WPT.....	Waypoint (RNAV)

06 MAY 2010 to 03 JUN 2010

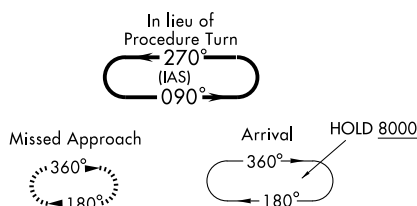
06 MAY 2010 to 03 JUN 2010

# PLANVIEW SYMBOLS

## TERMINAL ROUTES

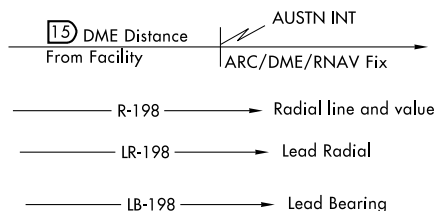
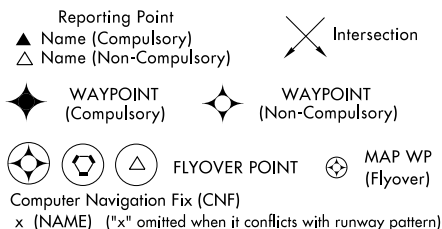


## HOLDING PATTERNS

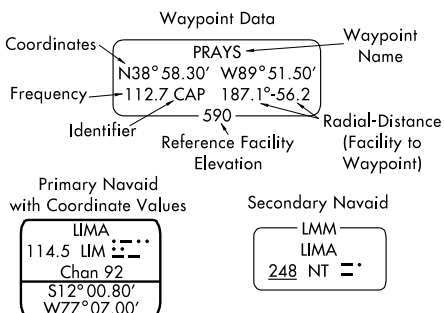
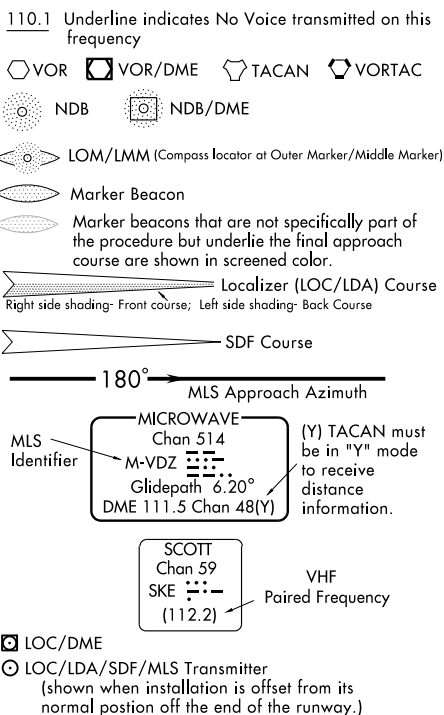


Holding pattern with max. restricted airspace:  
(175K) applies to all altitudes.  
(210K) applies to altitudes above 6000' to and including 14000'.  
Arrival Holding Pattern altitude restrictions will be indicated when they deviate from the adjacent leg.  
Limits will only be specified when they deviate from the standard. DME fixes may be shown.

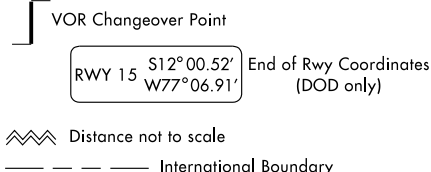
## FIXES/ATC REPORTING REQUIREMENTS



## RADIO AIDS TO NAVIGATION

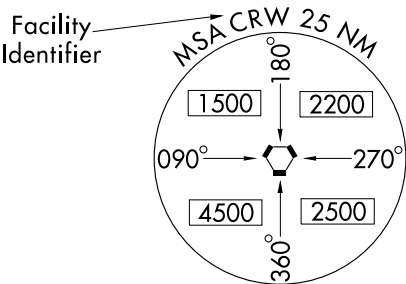


## MISCELLANEOUS



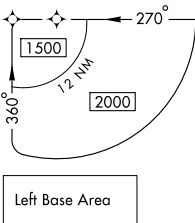
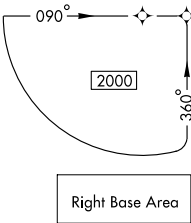
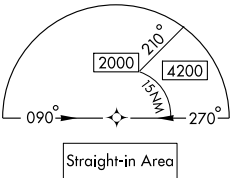
PLANVIEW SYMBOLS

MINIMUM SAFE ALTITUDE (MSA)



(arrows on distance circle identify sectors)

TERMINAL ARRIVAL AREA (TAA)



SPECIAL USE AIRSPACE



R-Restricted      W-Warning  
P-Prohibited      A-Alert

OBSTACLES

- Spot Elevation
- Highest Spot Elevation
- △ Obstacle
- ▲ Group of Obstacles
- △ Highest Obstacle
- ± Doubtful accuracy

AIRPORTS

- Primary and Secondary (named in planview)
- ✕ Seaplane Base

LEGEND

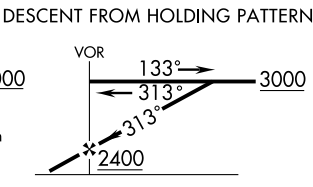
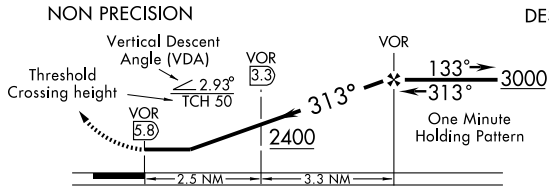
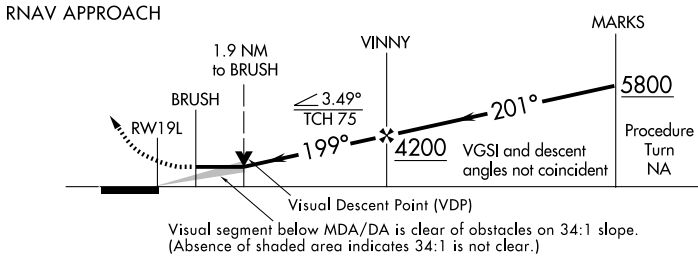
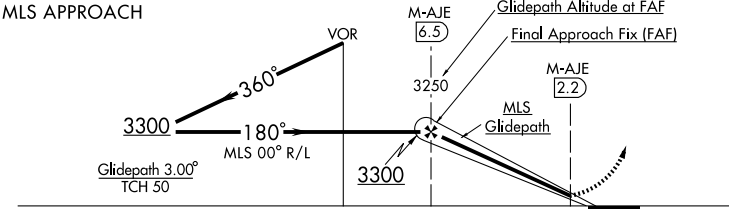
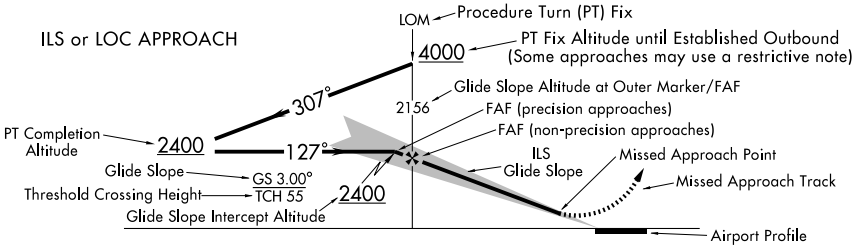
INSTRUMENT APPROACH PROCEDURES (CHARTS)

PROFILE VIEW

Two different methods are used for vertical guidance:

a. "GS" indicates an electronic glide slope or barometric vertical guidance is present. In the case of an Instrument Landing System (ILS) and Wide Area Augmentation System (WAAS) LPV approach procedures, an electronic signal provides vertical guidance. Barometric vertical guidance is provided for RNP and LNAV/VNAV instrument approach procedures. All ILS, LPV, RNP, and LNAV/VNAV will be in this format  $\text{GS } 3.00^\circ$ , located in the lower left or right corner.

b. Other charts without electronic or barometric vertical guidance will be in this format  $\text{TCH } 55$   $\text{TCH } 3.00^\circ$ , indicating a non-precision vertical descent angle to assist in preventing controlled flight into terrain. On Civil (FAA) procedures, this information is placed above or below the procedure track following the fix it is based on.



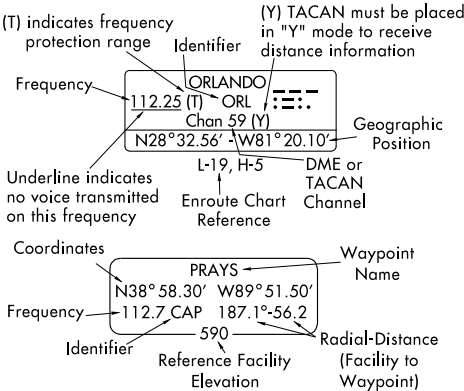
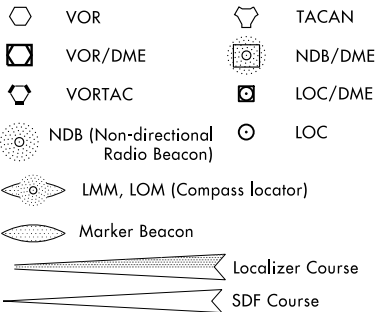
ALTITUDES	
5500	Mandatory Altitude
2500	Minimum Altitude
4300	Maximum Altitude
3000	Recommended Altitude
5000	Mandatory Block Altitude
3000	Mandatory Altitude

PROFILE SYMBOLS	
	Visual Flight Path
	Note: Facilities and waypoints are depicted as a solid vertical line while fixes and intersections are depicted as a dashed vertical line.
	Glide Slope/Glide Path Intercept Altitude and final approach fix for vertically guided approach procedures.
	Visual Descent Point (VDP)

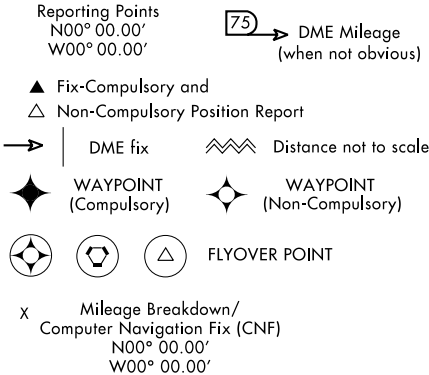
LEGEND

LEGEND  
STANDARD TERMINAL ARRIVAL (STAR) CHARTS  
DEPARTURE PROCEDURE (DP) CHARTS

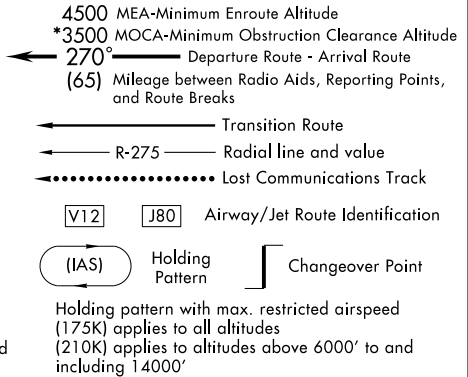
RADIO AIDS TO NAVIGATION



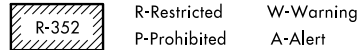
FIXES/ATC REPORTING REQUIREMENTS



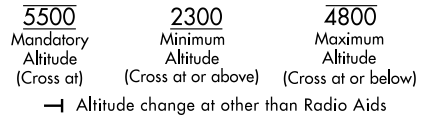
ROUTES



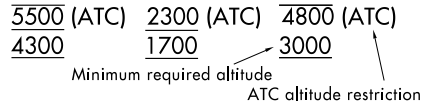
SPECIAL USE AIRSPACE



ALTITUDES



CROSSING ALTITUDES



AIRPORTS




NOTES


- All mileages are nautical.
- ★ Indicates a non-continuously operating facility, see A/FD or flight supplement.
- All radials, bearings are magnetic.
- All altitudes/elevations are in feet-MSL.
- MRA- Minimum Reception Altitude.
- MAA- Maximum Authorized Altitude.
- (NAME2.NAME) - Example of DP flight plan Computer Code.
- (NAME.NAME2) - Example of STAR flight plan Computer Code.
- SL-0000 (FAA) - Example of a chart reference number.
- Take-Off Minimums not standard and/or Departure Procedures are published.





AIRPORT DIAGRAM/AIRPORT SKETCH


Runways


  
Hard Surface


  
Other Than Hard Surface


  
Stopways, Taxiways, Parking Areas, Water Runways

  
Displaced Threshold

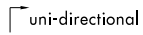
  
Closed Runway


  
Closed Taxiway


  
Under Construction


  
Metal Surface

ARRESTING GEAR: Specific arresting gear systems; e.g., BAK12, MA-1A etc., shown on airport diagrams, not applicable to Civil Pilots. Military Pilots refer to appropriate DOD publications.


 uni-directional


 bi-directional


 Jet Barrier


ARRESTING SYSTEM 


REFERENCE FEATURES


Buildings.....


Tanks.....


Obstructions.....

Airport Beacon #.....

Runway.....

Radar Reflectors.....

Control Tower #.....

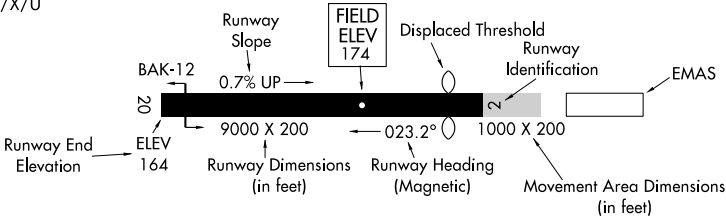
Hot Spot.....

# When Control Tower and Rotating Beacon are co-located, Beacon symbol will be used and further identified as TWR.

Runway length depicted is the physical length of the runway (end-to-end, including displaced thresholds if any) but excluding areas designated as stopways.





A **D** symbol is shown to indicate runway declared distance information available, see appropriate A/FD, Alaska or Pacific Supplement for distance information.





Runway Weight Bearing Capacity/or PCN Pavement Classification Number is shown as a codified expression.  
Refer to the appropriate Supplement/Directory for applicable codes e.g., RWY 14-32 S75, T185, ST175, TT325  
PCN 80 F/D/X/U



SCOPE

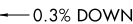
Airport diagrams are specifically designed to assist in the movement of ground traffic at locations with complex runway/taxiway configurations and provide information for updating Computer Based Navigation Systems (I.E., INS, GPS) aboard aircraft. Airport diagrams are not intended to be used for approach and landing or departure operations. For revisions to Airport Diagrams: Consult FAA Order 7910.4.

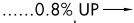
Helicopter Alighting Areas    

Negative Symbols used to identify Copter Procedures landing point.....   

Runway Threshold elevation.....THRE 123

Runway TDZ elevation.....TDZE 123

Runway Slope..... 0.3% DOWN

Runway Slope..... 0.8% UP

NOTE:  
Runway Slope measured to midpoint on runways 8000 feet or longer.

**U.S. Navy Optical Landing System (OLS) "OLS"** location is shown because of its height of approximately 7 feet and proximity to edge of runway may create an obstruction for some types of aircraft.

Approach light symbols are shown in the Flight Information Handbook.

Airport diagram scales are variable.

True/magnetic North orientation may vary from diagram to diagram

Coordinate values are shown in 1 or 1/2 minute increments. They are further broken down into 6 second ticks, within each 1 minute increments.

NOTE:  
All new and revised airport diagrams are shown referenced to the World Geodetic System (WGS) (noted on appropriate diagram), and may not be compatible with local coordinates published in FLIP. (Foreign Only)

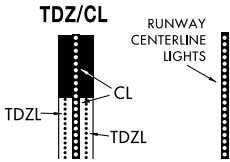
LEGEND

INSTRUMENT APPROACH PROCEDURES (CHARTS)  
APPROACH LIGHTING SYSTEM - UNITED STATES

Approach lighting and visual glide slope systems are indicated on the airport sketch by an identifier, e.g., (A2), (V), etc.

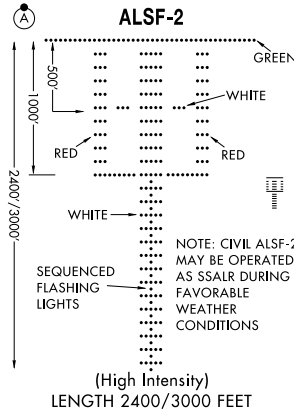
A dot "•" portrayed with approach lighting letter identifier indicates sequenced flashing lights (F) installed with the approach lighting system e.g., (A1). Negative symbology, e.g., (A1), (V) indicates Pilot Controlled Lighting (PCL).

RUNWAY TOUCHDOWN ZONE  
AND CENTERLINE  
LIGHTING SYSTEMS

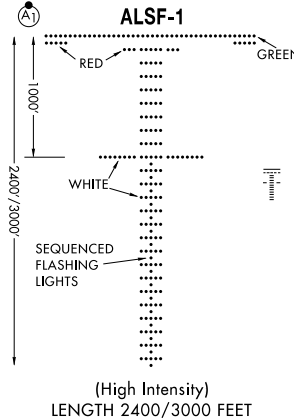


AVAILABILITY OF TDZ/CL will be shown by  
NOTE in SKETCH e.g. "TDZ/CL Rwy 15"

APPROACH LIGHTING SYSTEM



APPROACH LIGHTING SYSTEM

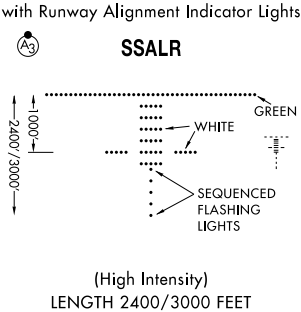


SHORT APPROACH  
LIGHTING SYSTEM

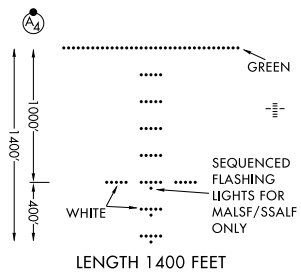
SALS/SALSF  
(High Intensity)

SAME AS INNER 1500' OF ALSF-1

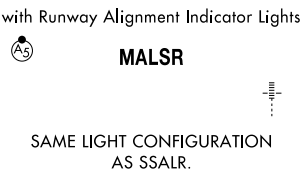
SIMPLIFIED SHORT  
APPROACH LIGHTING SYSTEM  
with Runway Alignment Indicator Lights



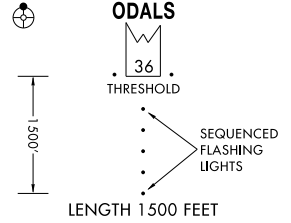
MEDIUM INTENSITY (MALS and  
MALSF) OR SIMPLIFIED SHORT  
(SSALS and SSALF)  
APPROACH LIGHTING SYSTEMS



MEDIUM INTENSITY  
APPROACH LIGHTING SYSTEM  
with Runway Alignment Indicator Lights

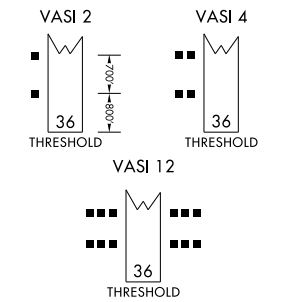


OMNIDIRECTIONAL  
APPROACH LIGHTING SYSTEM



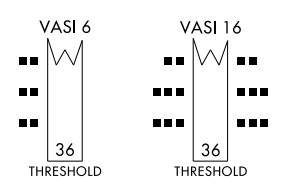
VISUAL APPROACH  
SLOPE INDICATOR

VASI  
VISUAL APPROACH SLOPE INDICATOR  
WITH STANDARD THRESHOLD CLEARANCE  
PROVIDED.  
ALL LIGHTS WHITE — TOO HIGH  
FAR LIGHTS RED — ON GLIDE SLOPE  
NEAR LIGHTS WHITE — TOO LOW  
ALL LIGHTS RED — TOO LOW



VISUAL APPROACH  
SLOPE INDICATOR

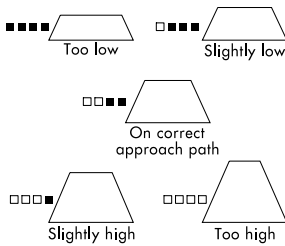
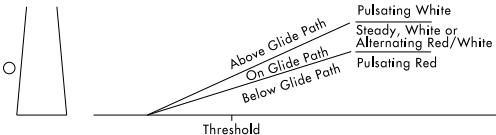
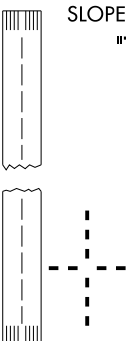
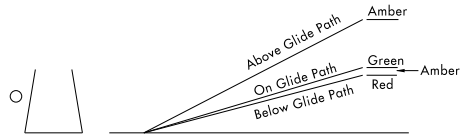
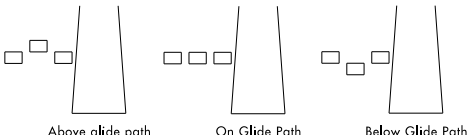
VASI  
VISUAL APPROACH SLOPE INDICATOR  
WITH A THRESHOLD CROSSING HEIGHT TO  
ACCOMMODATE LONG BODIED OR JUMBO  
AIRCRAFT.



06 MAY 2010 TO 03 JUN 2010

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LEGEND

<p>Approach lighting and visual glide slope systems are indicated on the airport sketch by an identifier, (A<sub>2</sub>), (V) etc.</p> <p>A dot "●" portrayed with approach lighting letter identifier indicates sequenced flashing lights (F) installed with the approach lighting system e.g., (A<sub>1</sub>). Negative symbology, e.g., (A<sub>1</sub>), (V) indicates Pilot Controlled Lighting (PCL).</p>	
<div><p>(P) <b>PRECISION APPROACH PATH INDICATOR</b></p><p><b>PAPI</b></p><p>Legend: □ White ■ Red</p></div>	<div><p>(V<sub>2</sub>) <b>PULSATING VISUAL APPROACH SLOPE INDICATOR</b></p><p><b>PVASI</b></p><p>CAUTION: When viewing the pulsating visual approach slope indicators in the pulsating white or pulsating red sectors, it is possible to mistake this lighting aid for another aircraft or a ground vehicle. Pilots should exercise caution when using this type of system.</p></div>
<div><p>(V<sub>1</sub>) <b>"T"-VISUAL APPROACH SLOPE INDICATOR</b></p><p><b>"T"-VASI</b></p><p>"T" ON BOTH SIDES OF RWY ALL LIGHTS VARIABLE WHITE. CORRECT APPROACH SLOPE- ONLY CROSS BAR VISIBLE. UPRIGHT "T"- FLY UP. INVERTED "T"- FLY DOWN. RED "T"- GROSS UNDERSHOOT.</p></div>	<div><p>(V<sub>4</sub>) <b>TRI-COLOR VISUAL APPROACH SLOPE INDICATOR</b></p><p><b>TRCV</b></p><p>CAUTION: When the aircraft descends from green to red, the pilot may see a dark amber color during the transition from green to red.</p></div>
	<div><p>(V<sub>5</sub>) <b>ALIGNMENT OF ELEMENTS SYSTEMS</b></p><p><b>APAP</b></p><p>Painted panels which may be lighted at night. To use the system the pilot positions the aircraft so the elements are in alignment.</p></div>

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MLS CHANNELING AND FREQUENCY PAIRING TABLE

06 MAY 2010 to 03 JUN 2010

MLS CHANNEL	VHF FREQUENCY	TACAN CHANNEL	MLS CHANNEL	VHF FREQUENCY	TACAN CHANNEL	MLS CHANNEL	VHF FREQUENCY	TACAN CHANNEL
500	108.10	18X	568	109.45	31Y	636	114.15	88Y
502	108.30	20X	570	109.55	32Y	638	114.25	89Y
504	108.50	22X	572	109.65	33Y	640	114.35	90Y
506	108.70	24X	574	109.75	34Y	642	114.45	91Y
508	108.90	26X	576	109.85	35Y	644	114.55	92Y
510	109.10	28X	578	109.95	36Y	646	114.65	93Y
512	109.30	30X	580	110.05	37Y	648	114.75	94Y
514	109.50	32X	582	110.15	38Y	650	114.85	95Y
516	109.70	34X	584	110.25	39Y	652	114.95	96Y
518	109.90	36X	586	110.35	40Y	654	115.05	97Y
520	110.10	38X	588	110.45	41Y	656	115.15	98Y
522	110.30	40X	590	110.55	42Y	658	115.25	99Y
524	110.50	42X	592	110.65	43Y	660	115.35	100Y
526	110.70	44X	594	110.75	44Y	662	115.45	101Y
528	110.90	46X	596	110.85	45Y	664	115.55	102Y
530	111.10	48X	598	110.95	46Y	666	115.65	103Y
532	111.30	50X	600	111.05	47Y	668	115.75	104Y
534	111.50	52X	602	111.15	48Y	670	115.85	105Y
536	111.70	54X	604	111.25	49Y	672	115.95	106Y
538	111.90	56X	606	111.35	50Y	674	116.05	107Y
540	108.05	17Y	608	111.45	51Y	676	116.15	108Y
542	108.15	18Y	610	111.55	52Y	678	116.25	109Y
544	108.25	19Y	612	111.65	53Y	680	116.35	110Y
546	108.35	20Y	614	111.75	54Y	682	116.45	111Y
548	108.45	21Y	616	111.85	55Y	684	116.55	112Y
550	108.55	22Y	618	111.95	56Y	686	116.65	113Y
552	108.65	23Y	620	113.35	80Y	688	116.75	114Y
554	108.75	24Y	622	113.45	81Y	690	116.85	115Y
556	108.85	25Y	624	113.55	82Y	692	116.95	116Y
558	108.95	26Y	626	113.65	83Y	694	117.05	117Y
560	109.05	27Y	628	113.75	84Y	696	117.15	118Y
562	109.15	28Y	630	113.85	85Y	698	117.25	119Y
564	109.25	29Y	632	113.95	86Y			
566	109.35	30Y	634	114.05	87Y			

06 MAY 2010 to 03 JUN 2010

LAND AND HOLD SHORT OPERATIONS (LAHSO)

THERE ARE NO LAND AND HOLD  
SHORT OPERATIONS (LAHSO)  
FOR ALASKA

06 MAY 2010 to 03 JUN 2010

06 MAY 2010 to 03 JUN 2010

LAND AND HOLD SHORT OPERATIONS (LAHSO)

LAHSO is an acronym for "Land and Hold Short Operations." These operations include landing and holding short of an intersection runway, an intersecting taxiway, or other predetermined points on the runway other than a runway or taxiway. Measured distance represents the available landing distance on the landing runway, in feet.

Specific questions regarding these distances should be referred to the air traffic manager of the facility concerned. The Aeronautical Information Manual contains specific details on hold-short operations and markings.

CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
BATTLE CREEK, MI W.K. KELLOGG (BTL)	05	13/31	7,000 feet
DETROIT, MI COLEMAN A. YOUNG MUNI (DET)	15	07/25	4,900 feet
FLINT, MI BISHOP INTL (FNT)	09 36	18/36 09/27	4,100 feet 6,300 feet
JACKSON, MI JACKSON COUNTY-REYNOLDS FIELD (JXN)	24	14/32	3,406 feet
TRAVERSE CITY, MI CHERRY CAPITAL (TVC)	18 28	10/28 18/36	2,850 feet 5,500 feet

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

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Specific questions regarding these distances should be referred to the air traffic manager of the facility concerned. The Aeronautical Information Manual contains specific details on hold-short operations and markings.

CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
AKRON, OH AKRON-CANTON RGNL (CAK)	05	01/19	4,300 feet
	19	05/23	3,100 feet
BLOOMINGTON, IN MONROE COUNTY (BMG)	17	06/24	6,100 feet
COLUMBUS, OH OHIO STATE UNIVERSITY (OSU)	05	09L/27R	3,350 feet
	09L	05/23	2,550 feet
	09R	14/32	3,300 feet
	14	09R/27L	2,750 feet
	23	09R/27L	2,500 feet
	27L	05/23	3,300 feet
FORT WAYNE, IN FORT WAYNE INTL (FWA)	05	14/32	9,150 feet
	14	05/23	5,650 feet
	27	05/23	2,700 feet
LAFAYETTE, IN PURDUE UNIVERSITY (LAF)	10	05/23	4,600 feet
MANSFIELD, OH MANSFIELD LAHM RGNL (MFD)	05	14/32	4,350 feet
	14	05/23	6,100 feet
MUNCIE, IN DELAWARE COUNTY RGNL (MIE)	14	02/20	4,300 feet
	20	14/32	3,500 feet
TERRE HAUTE, IN TERRE HAUTE INTL-HULMAN FIELD (HUF)	05	18/36	4,650 feet
	18	05/23	3,300 feet
	23	18/36	3,450 feet
	32	05/23	4,237 feet
	36	14/32	3,200 feet

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Specific questions regarding these distances should be referred to the air traffic manager of the facility concerned. The Aeronautical Information Manual contains specific details on hold-short operations and markings.

CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
ALTON/ST. LOUIS, IL			
ST. LOUIS RGNL (ALN)	29	17/35	6,850 feet
	35	11/29	5,100 feet
APPLETON, WI			
OUTAGAMIE COUNTY RGNL (ATW)	03	12/30	3,300 feet
	21	12/30	4,100 feet
	30	03/21	3,400 feet
BLOOMINGTON/NORMAL, IL			
CENTRAL IL REGL ARPT AT			
BLOOMINGTON-NORMAL (BMI)	02	11/29	4,600 feet
	11	02/20	6,200 feet
CARBONDALE-MURPHYSBORO, IL			
SOUTHERN ILLINOIS (MDH)	06	18L/36R	3,100 feet
	24	18R/36L	3,800 feet
	36R	06/24	3,000 feet
CHAMPAIGN-URBANA, IL			
UNIVERSITY OF ILLINOIS-WILLARD (CMI)	04	14L/32R	3,600 feet
	14L	04/22	3,550 feet
	18	04/22	4,100 feet
	22	18/36	4,700 feet
	32R	04/22	4,050 feet
	36	14L/32R	3,950 feet
CHICAGO, IL			
CHICAGO-O'HARE INTL (ORD)	09R	14L/32R	6,100 feet
	10	TWY S	12,156 feet
	22R	09R/27L	6,050 feet
	27L	04L/22R	5,700 feet
	28	14R/32L	6,500 feet
CHICAGO/AURORA, IL			
AURORA MUNI (ARR)	09	18/36	3,450 feet
	15	09/27	3,900 feet
	27	15/33	4,000 feet
CHICAGO/PROSPECT HEIGHTS/WHEELING, IL			
PALWAUKEE MUNI (PWK)	16	12/30	3,623 feet
DECATUR, IL			
DECATUR (DEC)	06	12/30	4,800 feet
	12	06/24	4,450 feet
	18	06/24	4,450 feet
	24	12/30	3,000 feet
	24	18/36	8,000 feet
	30	18/36	5,050 feet
	36	12/30	4,800 feet

(SEE CONTINUATION PAGE FOR MORE LISTINGS)

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

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Specific questions regarding these distances should be referred to the air traffic manager of the facility concerned. The Aeronautical Information Manual contains specific details on hold-short operations and markings.

CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
DULUTH, MN DULUTH INTL (DLH)	09	03/21	8,950 feet
GRAND FORKS, ND GRAND FORKS INTL (GFK)	27R 35L	17R/35L 09L/27R	3,000 feet 4,600 feet
MINNEAPOLIS, MN MINNEAPOLIS-ST PAUL INTL/ WOLD-CHAMBERLAIN (MSP)	22 30L	TWY K TWY A9/W9	8,550 feet 8,150 feet
ROCHESTER, MN ROCHESTER INTL (RST)	02 13 31	13/31 02/20 02/20	5,850 feet 5,270 feet 3,200 feet

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

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Specific questions regarding these distances should be referred to the air traffic manager of the facility concerned. The Aeronautical Information Manual contains specific details on hold-short operations and markings.

CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
HUTCHINSON, KS HUTCHINSON MUNI (HUT)	13	04/22	5,250 feet
	17	04/22	3,200 feet
	22	13/31	3,400 feet
	31	17/35	2,800 feet
OLATHE, KS NEW CENTURY AIRCENTER (IXD)	18	04/22	2,700 feet
	36	04/22	3,650 feet
	22	18/36	3,300 feet

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

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Specific questions regarding these distances should be referred to the air traffic manager of the facility concerned. The Aeronautical Information Manual contains specific details on hold-short operations and markings.

CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
CEDAR RAPIDS, IA THE EASTERN IOWA (CID)	09	13/31	5,800 feet
COLUMBIA, MO COLUMBIA RGNL (COU)	02 13	13/31 02/20	6,050 feet 3,500 feet
DES MOINES, IA DES MOINES INTL (DSM)	05 13	13/31 05/23	6,350 feet 5,950 feet
DUBUQUE, IA DUBUQUE RGNL (DBQ)	31 36	18/36 13/31	4,800 feet 4,900 feet
JOPLIN, MO JOPLIN RGNL (JLN)	13 18	18/36 13/31	3,250 feet 4,900 feet
KANSAS CITY, MO CHARLES B. WHEELER DOWNTOWN (MKC)	19	03/21	3,850 feet
SIOUX CITY, IA SIOUX GATEWAY/COL. BUD DAY FIELD (SUX)	13 17	17/35 13/31	5,400 feet 5,650 feet
SPRINGFIELD, MO SPRINGFIELD-BRANSON NATIONAL (SGF)	14 20	02/20 14/32	6,200 feet 4,550 feet
WATERLOO, IA WATERLOO RGNL (ALO)	06 12 18 24 30 36	12/30 06/24 06/24 18/36 18/36 12/30	3,900 feet 6,100 feet 4,850 feet 3,950 feet 4,800 feet 3,650 feet

06 MAY 2010 to 03 JUN 2010

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

LAHSO is an acronym for "Land and Hold Short Operations." These operations include landing and holding short of an intersection runway, an intersecting taxiway, or other predetermined points on the runway other than a runway or taxiway. Measured distance represents the available landing distance on the landing runway, in feet.

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
BEDFORD, MA LAURENCE G. HANSCOM FIELD (BED)	05	11/29	3,000 feet
	11	05/23	2,650 feet
	29	05/23	3,650 feet
BEVERLY, MA BEVERLY MUNI (BVY)	09	16/34	3,450 feet
	16	09/27	4,000 feet
BOSTON, MA GENERAL EDWARD LAWRENCE LOGAN INTL (BOS)	04L	15L/33R	5,250 feet
	15R	09/27	6,800 feet
	22L	09/27	6,400 feet
	27	04R/22L	5,650 feet
BRIDGEPORT, CT IGOR I. SIKORSKY MEMORIAL (BDR)	06	11/29	3,700 feet
	11	06/24	3,350 feet
BURLINGTON, VT BURLINGTON INTL (BTV)	01	15/33	2,600 feet
	15	01/19	3,750 feet
	33	01/19	2,900 feet
HYANNIS, MA BARNSTABLE MUNI-BOARDMAN/ POLANDO FIELD (HYA)	15	06/24	4,150 feet
	24	15/33	4,650 feet
NANTUCKET, MA NANTUCKET MEMORIAL (ACK)	06	15/33	4,316 feet
	33	06/24	3,150 feet
NORWOOD, MA NORWOOD MEMORIAL (OWD)	35	10/28	3,320 feet
PORTLAND, ME PORTLAND INTL JETPORT (PWM)	11	18/36	5,800 feet
	18	11/29	3,500 feet
WINDSOR LOCKS, CT BRADLEY INTL (BDL)	06	01/19	6,000 feet
	24	15/33	5,850 feet
	33	06/24	4,550 feet

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
ALBANY, NY			
ALBANY INTL (ALB)	01	10/28	4,150 feet
	28	01/19	3,750 feet
ATLANTIC CITY, NJ			
ATLANTIC CITY INTL (ACY)	04	13/31	3,550 feet
	13	04/22	3,600 feet
	31	04/22	5,750 feet
ELMIRA, NY			
ELMIRA/CORNING RGNL (ELM)	24	10/28	4,750 feet
	28	06/24	3,050 feet
FARMINGDALE, NY			
REPUBLIC (FRG)	32	01/19	3,650 feet
ISLIP, NY			
LONG ISLAND MAC ARTHUR (ISP)	06	15R/33L	4,200 feet
	10	15R/33L	3,000 feet
	15R	10/28	4,600 feet
	24	10/28	4,600 feet
	28	06/24	4,500 feet
NEW YORK, NY			
LA GUARDIA (LGA)	04	13/31	4,600 feet
	31	04/22	5,500 feet
NEWARK, NJ			
NEWARK LIBERTY INTL (EWR)	11	04R/22L	5,700 feet
	04L	11/29	7,750 feet
	04R	11/29	8,100 feet
POUGHKEEPSIE, NY			
DUTCHESS COUNTY (POU)	06	15/33	3,150 feet
SYRACUSE, NY			
SYRACUSE HANCOCK INTL (SYR)	10	15/33	7,700 feet
	15	10/28	6,000 feet
TETERBORO, NJ			
TETERBORO (TEB)	01	06/24	4,550 feet
	06	01/19	3,750 feet

(SEE CONTINUATION PAGE FOR MORE LISTINGS)

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
NEWPORT NEWS, VA NEWPORT NEWS/WILLIAMSBURG INTL (PHF)	20	07/25	5,200 feet
	25	02/20	6,550 feet
NORFOLK, VA NORFOLK INTL (ORF)	14	05/23	2,850 feet
	23	14/32	6,300 feet
WILMINGTON, DE NEW CASTLE (ILG)	01	09/27	4,050 feet
	14	01/19	4,450 feet
	19	14/32	5,750 feet
	32	09/27	3,600 feet

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
ERIE, PA ERIE INTL/TOM RIDGE FIELD (ERI)	24	02/20	4,100 feet
HARRISBURG, PA CAPITAL CITY (CXY)	26	12/30	3,450 feet
LANCASTER, PA LANCASTER (LNS)	26	13/31	5,190 feet
PHILADELPHIA, PA NORTHEAST PHILADELPHIA (PNE)	24 33	15/33 06/24	4,150 feet 3,600 feet
PHILADELPHIA, PA PHILADELPHIA INTL (PHL)	09L 17	17/35 09L/27R	7,350 feet 4,400 feet
PITTSBURGH, PA ALLEGHENY COUNTY (AGC)	10	13/31	3,250 feet
READING, PA READING RGNL/CARL A. SPAATZ FIELD (RDG)	13 18	18/36 13/31	5,200 feet 3,050 feet
WILKES-BARRE/SCRANTON, PA WILKES-BARRE-SCRANTON INTL (AVP)	04	10/28	4,700 feet

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
BOZEMAN, MT GALLATIN FIELD (BZN)	12	03/21	6841 feet
MOSES LAKE, WA GRANT COUNTY INTL (MWH)	04	14L/32R	4,700 feet
	14L	04/22	7,550 feet
	22	14L/32R	4,650 feet
	32R	04/22	5,050 feet
PORTLAND, OR PORTLAND-HILLSBORO (HIO)	12	02/20	4,922 feet
SALEM, OR MCNARY FIELD (SLE)	31	16/34	3,150 feet
	34	13/31	3,050 feet
SPOKANE, WA SPOKANE INTL (GEG)	07	03/21	2,800 feet
	21	07/25	7,000 feet
	25	03/21	4,350 feet
TWIN FALLS, ID JOSLIN FIELD-MAGIC VALLEY RGNL (TWF)	07	12/30	4,500 feet
	25	12/30	3,600 feet

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

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Specific questions regarding these distances should be referred to the air traffic manager of the facility concerned. The Aeronautical Information Manual contains specific details on hold-short operations and markings.

CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
HONOLULU, HI HONOLULU INTL (HNL) (PHNL)	04L	08L/26R	3,700 feet
	04R	08L/26R	6,250 feet
	08L	04L/22R	9,300 feet

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

THERE ARE NO LAND AND HOLD  
SHORT OPERATIONS (LAHSO)  
FOR ARKANSAS OR OKLAHOMA

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

LAHSO is an acronym for "Land and Hold Short Operations." These operations include landing and holding short of an intersection runway, an intersecting taxiway, or other predetermined points on the runway other than a runway or taxiway. Measured distance represents the available landing distance on the landing runway, in feet.

Specific questions regarding these distances should be referred to the air traffic manager of the facility concerned. The Aeronautical Information Manual contains specific details on hold-short operations and markings.

CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
DALLAS-FORT WORTH, TX DALLAS-FORT WORTH INTL (DFW)	17C	TWY B	10,460 feet
	18R	TWY B	10,100 feet
	35C	TWY EJ	9,050 feet
	36L	TWY Z	10,650 feet
LONGVIEW, TX EAST TEXAS RGNL (GGG)	31	18/36	8,100 feet
	36	13/31	4,080 feet

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
WACO, TX			
WACO RGNL (ACT)	14	01/19	5,150 feet
	19	14/32	6,050 feet

LAND AND HOLD SHORT OPERATIONS (LAHSO)

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
BATON ROUGE, LA BATON ROUGE METROPOLITAN, RYAN FIELD (BTR)	13	04L/22R	4,140 feet
	22R	13/31	3,450 feet
	22L	13/31	2,900 feet

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
HOUSTON, TX			
GEORGE BUSH INTERCONTINENTAL/	26L	TWY NE	9,010 feet
HOUSTON (IAH)	08R	TWY NP	9,019 feet

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
MEMPHIS, TN MEMPHIS INTL (MEM)	27	TWY N	8,450 feet
SMYRNA, TN SMYRNA (MQY)	01	14/32	3,000 feet
	14	01/19	3,409 feet
	32	01/19	3,950 feet

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
CHARLESTON, SC CHARLESTON AFB/INTL (CHS)	03	15/33	5,550 feet
	15	03/21	5,700 feet
	33	03/21	2,900 feet
GREENSBORO, NC PIEDMONT TRIAD INTL (GSO)	14	05R/23L	3,450 feet
	23	14/32	9,200 feet
WINSTON-SALEM, NC SMITH REYNOLDS (INT)	33	04/22	6,010 feet

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
DAYTONA BEACH, FL			
DAYTONA BEACH INTL (DAB)	07L	TWY W	7,500 feet
	16	07L/25R	2,900 feet
FORT LAUDERDALE, FL			
FORT LAUDERDALE EXECUTIVE (FXE)	26	13/31	3,000 feet
	31	08/26	3,250 feet
JACKSONVILLE, FL			
CRAIG MUNI (CRG)	05	14/32	3,600 feet
	14	05/23	3,650 feet
LAKELAND, FL			
LAKELAND LINDER RGNL (LAL)	05	09/27	2,500 feet
	09	05/23	6,000 feet
MIAMI, FL			
MIAMI INTL (MIA)	09	12/30	9,750 feet
	12	09/27	8,100 feet
ORLANDO, FL			
EXECUTIVE (ORL)	25	13/31	4,500 feet
ORLANDO SANFORD (SFB)	09L	18/36	5,500 feet
	09C	18/36	3,150 feet
	18	09R/27L	4,624 feet
	27L	18/36	5,760 feet
	36	09L/27R	5,300 feet
POMPANO BEACH, FL			
POMPANO BEACH AIRPARK (PMP)	10	15/33	3,000 feet
	15	10/28	3,800 feet
ST. PETERSBURG-CLEARWATER, FL			
ST. PETERSBURG-CLEARWATER INTL (PIE)	04	09/27	4,286 feet
	09	04/22	4,733 feet
	17L	04/22	7,557 feet
	22	17L/35R	4,514 feet
	35R	09/27	3,405 feet
SARASOTA (BRADENTON), FL			
SARASOTA/BRADENTON INTL (SRQ)	14	04/22	3,800 feet
TAMPA, FL			
TAMPA INTL (TPA)	18L	09/27	5,650 feet
	27	18L/36R	4,350 feet
TITUSVILLE, FL			
SPACE COAST RGNL (TIX)	09	18/36	4,035 feet
	36	09/27	3,750 feet
VERO BEACH, FL			
VERO BEACH MUNI (VRB)	29L	04/22	4,700 feet
WEST PALM BEACH, FL			
PALM BEACH INTL (PBI)	10L	14/32	3,200 feet
	14	10L/28R	4,370 feet
	28R	14/32	3,725 feet

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
ATLANTA, GA HARTSFIELD-JACKSON ATLANTA INTL (ATL)	08L	TWY B13	8,490 feet
	09R	TWY J	8,620 feet
	26R	TWY H	8,600 feet
	27L	TWY P	8,600 feet
BIRMINGHAM, AL BIRMINGHAM INTL (BHM)	06	18/36	8,700 feet
	36	06/24	5,150 feet
SAVANNAH, GA SAVANNAH/HILTON HEAD INTL (SAV)	01	10/28	4,050 feet
	10	01/19	5,450 feet
	28	01/19	3,250 feet

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
COLORADO SPRINGS, CO			
CITY OF COLORADO SPRINGS MUNI (COS)	30	17R/35L	7,450 feet
	35L	12/30	10,250 feet
PUEBLO, CO			
PUEBLO MEMORIAL (PUB)	17	08L/26R	5,850 feet
	26R	17/35	8,300 feet

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
NAPA, CA	18R	06/24	5,450 feet
NAPA COUNTY (APC)	24	18R/36L	3,700 feet

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
BURBANK, CA BOB HOPE (BUR)	15	08/26	4,250 feet
LONG BEACH, CA LONG BEACH (DAUGHERTY FIELD) (LGB)	12 25R 30	16L/34R 12/30 07L/25R	4,100 feet 3,400 feet 5,850 feet

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LAND AND HOLD SHORT OPERATIONS (LAHSO)

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CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
LAS VEGAS, NV NORTH LAS VEGAS (VGT)	25	12R/30L	4,000 feet
	30L	07/25	4,000 feet
OGDEN, UT OGDEN-HINCKLEY (OGD)	03	07/25	4,700 feet
	07	03/21	3,450 feet
	21	16/34	4,550 feet
	34	07/25	3,850 feet
PRESCOTT, AZ ERNEST A. LOVE FIELD (PRC)			
	21L	12/30	5,150 feet

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LAND AND HOLD SHORT OPERATIONS (LAHSO)  
(CONTINUED)

CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
GREEN BAY, WI			
AUSTIN STRAUBEL INTL (GRB)	18	06/24	2,692 feet
	24	18/36	6,050 feet
	36	06/24	4,932 feet
MADISON, WI			
DANE COUNTY RGNL- TRUAX FIELD (MSN)	03	14/32	3,400 feet
	18	03/21	4,850 feet
	21	18/36	6,450 feet
	32	18/36	5,300 feet
	36	14/32	7,050 feet
MARION, IL			
WILLIAMSON COUNTY RGNL (MWA)	20	11/29	6,650 feet
	29	02/20	4,650 feet
MOSINEE, WI			
CENTRAL WISCONSIN (CWA)	26	17/35	7,300 feet
	35	08/26	5,000 feet
ROCKFORD, IL			
CHICAGO/ROCKFORD INTL (RFD)	01	07/25	6,000 feet
	07	01/19	8,800 feet
SPRINGFIELD, IL			
ABRAHAM LINCOLN CAPITAL (SPI)	04	13/31	3,200 feet
	22	13/31	4,150 feet
	31	04/22	3,350 feet
	36	13/31	3,000 feet

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LAND AND HOLD SHORT OPERATIONS (LAHSO)  
(CONTINUED)

CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	MEASURED DISTANCE
WHITE PLAINS, NY			
WESTCHESTER COUNTY (HPN)			
	11	16/34	2,500 feet
	16	11/29	4,000 feet

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HOT SPOTS

THERE ARE NO HOT SPOTS  
FOR ALASKA

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HOT SPOTS

An "airport surface hot spot" is a location on an aerodrome movement area with a history or potential risk of collision or runway incursion, and where heightened attention by pilots/drivers is necessary.

A "hot spot" is a runway safety related problem area on an airport that presents increased risk during surface operations. Typically it is a complex or confusing taxiway/taxiway or taxiway/runway intersection. The area of increased risk has either a history of or potential for runway incursions or surface incidents, due to a variety of causes, such as but not limited to: airport layout, traffic flow, airport marking, signage and lighting, situational awareness, and training. Hot spots are depicted on airport diagrams as open circles or polygons designated as "HOT<sup>1</sup>", "HOT<sup>2</sup>", etc. and tabulated in the list below with a brief description of each hot spot. Hot spots will remain charted on airport diagrams until such time the increased risk has been reduced or eliminated.

CITY/AIRPORT	HOT SPOT	DESCRIPTION *
DETROIT, MI DETROIT METROPOLITAN WAYNE COUNTY (DTW)	HOT <sup>1</sup>	Rwy 4R/22L and Rwy 9L/27R.
	HOT <sup>2</sup>	Rwy 3L/21R and Rwy 9L/27R.
	HOT <sup>3</sup>	Twy F and Rwy 3L/21R.
JACKSON, MI JACKSON COUNTY- REYNOLDS FIELD (JXN)	HOT <sup>1</sup>	Caution confusing signage.
	HOT <sup>2</sup>	No signage.

\*See appropriate A/FD, Alaska or Pacific Supplement HOT SPOT table for additional information.

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HOT SPOTS

An "airport surface hot spot" is a location on an aerodrome movement area with a history or potential risk of collision or runway incursion, and where heightened attention by pilots/drivers is necessary.

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CITY/AIRPORT	HOT SPOT	DESCRIPTION*
EVANSVILLE, IN EVANSVILLE RGNL (EVV)	HOT <sup>1</sup>	Pilots taxiing to Rwy 9 enter the rwy mid-field.
	HOT <sup>2</sup>	Rwy 27 and Twy A.
	HOT <sup>3</sup>	Rwy 18/36 in close proximity to General Aviation Ramp.
	HOT <sup>4</sup>	Rwy 18/36 in close proximity to General Aviation Ramp.

\*See appropriate A/FD, Alaska or Pacific Supplement HOT SPOT table for additional information.

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HOT SPOTS

An "airport surface hot spot" is a location on an aerodrome movement area with a history or potential risk of collision or runway incursion, and where heightened attention by pilots/drivers is necessary.

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CITY/AIRPORT	HOT SPOT	DESCRIPTION*
ALTON/ST. LOUIS, IL ST. LOUIS RGNL (ALN)	HOT <sup>1</sup> HOT <sup>2</sup>	Twy C and Rwy 11, rwy in close proximity of ramp. Twy A and Rwy 17/35, rwy in close proximity of ramp.
CHICAGO, IL CHICAGO-O'HARE INTL (ORD)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup> HOT <sup>4</sup> HOT <sup>5</sup>  HOT <sup>6</sup> HOT <sup>7</sup> HOT <sup>8</sup> HOT <sup>9</sup>  HOT <sup>10</sup>  HOT <sup>11</sup>	Twy R between Rwy 09R/27L and Rwy 04L/22R. Rwy 27L and Rwy 04L/22R. Twy B to Twy H intersection close proximity to Rwy 09R/27L. Rwy 09R/27L and Twy A1. Intersection of Twy U5 and Twy U in close proximity to Rwy 09R/27L. Twy U and Twy H close proximity to Rwy 09R/27L. Twy T10 and Twy M. Twy S5 and Rwy 04R. Intersection of Twy E, Twy G and Twy Z close proximity of rwy. Landing Rwy 27R first available turn off is Twy C1 6500' from Rwy 27R threshold. Rwy 14R and Rwy 10/28. Rwy 14R now ends north of active Rwy 10/28. Rwy 10/28 arrivals - There is no exit from Rwy 10/28 onto Rwy 14R.
JANESVILLE, WI SOUTHERN WISCONSIN RGNL (JVL)	HOT <sup>1</sup>	Rwy 32 and Rwy 36 approach ends are closely aligned and may be confused when lining up for departure.
MILWAUKEE, WI GENERAL MITCHELL INTL (MKE)	HOT <sup>1</sup> HOT <sup>2</sup>	Twy E and Twy V at Rwy 19R and Rwy 25R. Twy M and Rwy 01L/19R.
MOLINE, IL QUAD CITY INTL (MLI)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup> HOT <sup>4</sup> HOT <sup>5</sup>	Twys in close proximity to Rwy 23. Wrong rwy departure risk. Holding position for Rwy 31 is in unusual location. Confusing twy intersection. Hold lines on Twy K appear abruptly.

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CITY/AIRPORT	HOT SPOT	DESCRIPTION*
MINNEAPOLIS, MN MINNEAPOLIS-ST PAUL INTL/ WOLD-CHAMBERLAIN (MSP)	HOT <sup>1</sup>	Complex intersection of Twy A, Twy B, Twy C, Twy D, and Twy H in near proximity to Rwy 12R/30L and Rwy 4/22.
	HOT <sup>2</sup>	Complex twy/rwy geometry.
	HOT <sup>3</sup>	Complex intersection of Twy C, Twy D, Twy P, and Twy Q in near proximity to Rwy 12L/30R and Rwy 4/22.
	HOT <sup>4</sup>	Complex geometry at Rwy 4 approach end.

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CITY/AIRPORT	HOT SPOT	DESCRIPTION*
DODGE CITY, KS DODGE CITY RGNL (DDC)	HOT <sup>1</sup>	Ramp is in close proximity to rwys.
GARDEN CITY, KS GARDEN CITY RGNL (GCK)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup>	Back taxi required for full length Rwy 12. Rwy 17/35 in close proximity to ramp non-movement area at Twy C. Twy A leads to intersection of Rwy 30.
GRAND ISLAND, NE CENTRAL NEBRASKA RGNL (GRI)	HOT <sup>1</sup> HOT <sup>2</sup>	Twy B crosses Rwy 17. Twy C crosses Rwy 17 at the ramp.
HUTCHINSON, KS HUTCHINSON MUNI (HUT)	HOT <sup>1</sup> HOT <sup>2</sup>	Complex twy/rwy crossings. Close proximity rwy boundry markings.
LIBERAL, KS LIBERAL MID-AMERICA RGNL (LBL)	HOT <sup>1</sup> HOT <sup>2</sup>	Multiple rwys and twys intersect in small area. Rwy 17/35 in close proximity to ramp non-movement area at Twy C.
MANHATTAN, KS MANHATTAN RGNL (MHK)	HOT <sup>1</sup> HOT <sup>2</sup>	Terminal ramp at Twy D intersects with Rwy 3/21. Twy A intersects with Rwy 13/31.
OLATHE, KS JOHNSON COUNTY EXECUTIVE (OJC)	HOT <sup>1</sup> HOT <sup>2</sup>	Twy crosses rwy. Unusual holding position.
OMAHA, NE EPPLEY AIRFIELD (OMA)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup>	Complex twy intersection. Runway safety area in close proximity to ramp. Runway safety area in close proximity to ramp.
SALINA, KS SALINA MUNI (SLN)	HOT <sup>1</sup> HOT <sup>2</sup>	Twy E intersection departures Rwy 17/35. Twy B intersects Rwy 12/30 and Rwy 17/35. Close proximity rwy boundry hold markings.

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CITY/AIRPORT	HOT SPOT	DESCRIPTION *
BRANSON, MO BRANSON (BBG)	HOT <sup>1</sup> HOT <sup>2</sup>	Ramp area exits on to rwy. Twy turn around at end of rwy. Frequent back taxi operations.
CEDAR RAPIDS, IA THE EASTERN IOWA (CID)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup>	Frequent aircraft and vehicle rwy crossings. Intersecting rwys. Twy crossing rwy.
COLUMBIA, MO COLUMBIA RGNL (COU)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup>	Confusing twy intersection. Unusual rwy holding position. Unusual rwy/rwy holding position.
DES MOINES, IA DES MOINES INTL (DSM)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup>  HOT <sup>4</sup>	From Twy B, turn on Twy D to access all rwys. Center twy complex and intersecting rwys, use extreme caution. The apch end of Rwy 5 at Twy P has limited visibility from the twr. ATCT restricted visibility at Iowa Air National Guard complex.
DUBUQUE, IA DUBUQUE RGNL (DBQ)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup>	Apch ends of rwys in close proximity Rwy 13/31 in close proximity to ramp non-movement area at Twy D. Rwy 13/31 in close proximity to ramp non-movement area at Twy C.
FORT DODGE, IA FORT DODGE RGNL (FOD)	HOT <sup>1</sup>	Intersection on twy just prior to rwys.
FORT LEONARD WOOD, MO WAYNESVILLE- ST. ROBERT RGNL FORNEY FLD (TBN)	HOT <sup>1</sup>	Single twy access to rwy. Frequent back-taxi ops.
JEFFERSON CITY, MO JEFFERSON CITY MEMORIAL (JEF)	HOT <sup>1</sup>  HOT <sup>2</sup>	Complex intersection. Rwy 12/30 intersects with Twy B and Rwy 9/27. Twy B at Rwy 27 holding position marking.
KANSAS CITY, MO CHARLES B. WHEELER DOWNTOWN (MKC)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup>	Twy G intersection with Rwy 3/21. Holding short between Rwy 1/19 and Rwy 3/21. Confusing twy intersection.
KANSAS CITY, MO KANSAS CITY INTL (MCI)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup> HOT <sup>4</sup>	Busy vehicle service road crosses Twy G east of Twy B. Twy E and Twy F intersection with Rwy 9/27. Twy C and Twy D intersection with Rwy 1R/19L. Twy B-2 crosses service road.

(SEE CONTINUATION PAGE FOR MORE LISTINGS)

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HOT SPOTS

THERE ARE NO HOT SPOTS  
FOR CONNECTICUT,  
MASSACHUSETTS,  
MAINE, NEW HAMPSHIRE,  
RHODE ISLAND OR VERMONT

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CITY/AIRPORT	HOT SPOT	DESCRIPTION*
CALDWELL, NJ ESSEX COUNTY (CDW)	HOT <sup>1</sup>	Twy N and Twy P close proximity to Rwy 28.
ROCHESTER, NY GREATER ROCHESTER INTL (ROC)	HOT <sup>1</sup> HOT <sup>2</sup>	Adjacent thresholds. Rwy intersection.

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CITY/AIRPORT	HOT SPOT	DESCRIPTION*
BALTIMORE, MD		
BALTIMORE/WASHINGTON		
INTL THURGOOD MARSHALL (BWI)	HOT <sup>1</sup>	Uncontrolled stop bar. No crossing allowed.
	HOT <sup>2</sup>	Rwy 10/28 in close proximity to Twy P1 intersection.
	HOT <sup>3</sup>	Twy E closed and barricaded.

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CITY/AIRPORT	HOT SPOT	DESCRIPTION *
HARRISBURG, PA CAPITAL CITY (CXY)	HOT <sup>1</sup>	Rwy 26 LAHSO.
	HOT <sup>2</sup>	Rwy 8 ILS hold line.
	HOT <sup>3</sup>	Twy C at Rwy 30 and Twy B.

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CITY/AIRPORT	HOT SPOT	DESCRIPTION *
BILLINGS, MT BILLINGS LOGAN INTL (BIL)	HOT <sup>1</sup>	Rwy 28R hold line at an unusual location at east edge of run up area.
	HOT <sup>2</sup>	Twy H crosses Rwy 07 protected area.
EUGENE, OR MAHLON SWEET FIELD (EUG)	HOT <sup>1</sup>	No access to Rwy 34L past Twy A9.
EVERETT, WA SNOHOMISH COUNTY (PAINE FIELD) (PAE)	HOT <sup>1</sup>	Hold line for Rwy 11/29 on Twy A4 and Twy A5 intersection are more than 500' wide.
	HOT <sup>2</sup>	Rwy 29 threshold in close proximity to ramp areas.
	HOT <sup>3</sup>	Twy A between Twy A8 and Twy A9 not visible from ATCT.
GREAT FALLS, MT GREAT FALLS INTL (GTF)	HOT <sup>1</sup>	No Rwy 21 access beyond A1.
	HOT <sup>2</sup>	A3 aligned with Rwy 25, wrong rwy departure risk.
IDAHO FALLS, ID IDAHO FALLS RGNL (IDA)	HOT <sup>1</sup>	Rwy 17/35 Twy C hold bars.
	HOT <sup>2</sup>	Twy A-1 and Rwy 20 apch hold bar.
	HOT <sup>3</sup>	Rwy 17 and Twy A hold bar.
LEWISTON, ID LEWISTON-NEZ PERCE COUNTY (LWS)	HOT <sup>1</sup>	Twy C and Twy G intersection close proximity to Rwy 12/30.
	HOT <sup>2</sup>	Twy G between Rwy 08/26 and Rwy 30 threshold. Short distance between rwy.
MISSOULA, MT MISSOULA INTL (MSO)	HOT <sup>1</sup>	Intersection of Twy A and Twy F. Critical turn for eastbound ramp access.
PORTLAND, OR PORTLAND INTL (PDX)	HOT <sup>1</sup>	Limited wing-tip clearance at taxiway convergence point.
SEATTLE, WA BOEING FIELD/ KING COUNTY INTL (BFI)	HOT <sup>1</sup>	Twy Z restricted access area.
	HOT <sup>2</sup>	Rwy 13R/31L and Twy A9. Wrong rwy departure risk.
SEATTLE, WA SEATTLE-TACOMA INTL (SEA)	HOT <sup>1</sup>	Aircraft exiting Rwy 34R via Twy H then Twy J; limited distance between rwy.

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CITY/AIRPORT	HOT SPOT	DESCRIPTION *
KAHULUI, HI KAHULUI (OGG)(PHOG)	HOT <sup>1</sup> HOT <sup>2</sup>	Rwy 5, Twy A, Twy F, and Twy G. Rwy 2/20, Twy E and the ramp.

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HOT SPOTS

THERE ARE NO HOT SPOTS  
FOR ARKANSAS OR  
OKLAHOMA

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HOT SPOTS

THERE ARE NO HOT SPOTS  
FOR NORTH TEXAS

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CITY/AIRPORT	HOT SPOT	DESCRIPTION *
MIDLAND, TX MIDLAND INTL (MAF)	HOT <sup>1</sup>	Twy B and Twy P merge.
	HOT <sup>2</sup>	Area not visible from tower.
	HOT <sup>3</sup>	Area not visible from tower.

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HOT SPOTS

THERE ARE NO HOT SPOTS  
FOR LOUISIANA  
OR MISSISSIPPI

06 MAY 2010 to 03 JUN 2010

06 MAY 2010 to 03 JUN 2010

HOT SPOTS

THERE ARE NO HOT SPOTS  
FOR SOUTHEAST TEXAS

06 MAY 2010 to 03 JUN 2010

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CITY/AIRPORT	HOT SPOT	DESCRIPTION *
KNOXVILLE, TN MC GHEE TYSON (TYS)	HOT <sup>1</sup>	Holding position marking for full length of Rwy 23L just beyond Twy A8 on Twy A.
	HOT <sup>2</sup>	Ramp exit Twy R5 short distance from Twy A.
	HOT <sup>3</sup>	Ramp exit Twy R4 short distance from Twy A.
	HOT <sup>4</sup>	Acft taxiing on Twy B4 southeast bound sometime fail to hold short of Rwy 23L

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CITY/AIRPORT	HOT SPOT	DESCRIPTION*
CHARLOTTE, NC CHARLOTTE/DOUGLAS INTL (CLT)	HOT <sup>1</sup>	Confusing intersection due to convergence of Twys R, A, C and C9, along with grass island.
RALEIGH/DURHAM, NC RALEIGH-DURHAM INTL (RDU)	HOT <sup>1</sup>	Intersection of Rwy 5R/23L and Twy C.

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CITY/AIRPORT	HOT SPOT	DESCRIPTION *
DAYTONA BEACH, FL DAYTONA BEACH INTL, (DAB)	HOT <sup>1</sup>	Intersection of Twy W and Twy S.
MIAMI, FL MIAMI INTL (MIA)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup>	Multiple intersections closely spaced. Confusing geometry. Twy runway ends in close proximity.
STUART, FL WITHAM FIELD (SUA)	HOT <sup>1</sup> HOT <sup>2</sup>	Intersecting rwys, wrong rwy departure risk. Rwy 12 and Twy A1.

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CITY/AIRPORT	HOT SPOT	DESCRIPTION *
ATLANTA, GA HARTSFIELD-JACKSON ATLANTA INTL (ATL)	HOT <sup>1</sup>	Twy C and Twy D at Rwy 8L/26R.
	HOT <sup>2</sup>	Twy C and Twy D at Rwy 8R/26L.
	HOT <sup>3</sup>	Twy H at Rwy 8R/26L.
	HOT <sup>4</sup>	Twy D at Rwy 9L/27R.
AUGUSTA, GA AUGUSTA RGNL AT BUSH FLD (AGS)	HOT <sup>1</sup>	Intersection of Twy E and Rwy 17/35.
MONTGOMERY, AL MONTGOMERY RGNL (DANELLY FLD) (MGM)	HOT <sup>1</sup>	Intersection of Twy A3 and the terminal ramp. Potential confusion of Twy A3 as the taxi route to Rwy 10/28.
	HOT <sup>2</sup>	Intersection of Twy A5 and the ANG ramp. Potential confusion of the ANG ramp with the terminal ramp when exiting Rwy 10/28 at Twy A5.

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HOT SPOTS

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CITY/AIRPORT	HOT SPOT	DESCRIPTION *
ASPEN, CO		
ASPEN-PITKIN COUNTY/SARDY FIELD (ASE)	HOT <sup>1</sup>	Twy A2. Short taxi distance from ramp to rwy.
	HOT <sup>2</sup>	Twy A and west edge of ramp.
	HOT <sup>3</sup>	Twy A4. Short taxi distance from ramp to rwy.
DENVER, CO		
CENTENNIAL (APA)	HOT <sup>1</sup>	Intersection Twy A-1. Hold line across run-up area.
	HOT <sup>2</sup>	Twy A, Twy A-8, Twy A-9 and Twy C-1 congested intersections.
	HOT <sup>3</sup>	Twy C-1 and Twy D-1 close proximity to Rwy 10.
DENVER, CO		
ROCKY MOUNTAIN METROPOLITAN (BJC)	HOT <sup>1</sup>	Frequent helicopter operations.
EAGLE, CO		
EAGLE COUNTY RGNL (EGE)	HOT <sup>1</sup>	High density parking area.

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CITY/AIRPORT	HOT SPOT	DESCRIPTION*
CONCORD, CA BUCHANAN FIELD (CCR)	HOT <sup>1</sup>	Rwy 1L/19R, Twy E and Twy J.
	HOT <sup>2</sup>	Rwy 32L and run-up area, Twy J.
	HOT <sup>3</sup>	Complex intersection at Rwy 1R/19L, Twy J, Twy A, Twy C, and Twy K.
	HOT <sup>4</sup>	Rwy 32L apch, Twy A.
HAYWARD, CA HAYWARD EXECUTIVE (HWD)	HOT <sup>1</sup>	Rwy 10L/28R, Twy E and Twy A.
	HOT <sup>2</sup>	Area not visible from ATCT.
	HOT <sup>3</sup>	Area not visible from ATCT.
MERCED, CA CASTLE (MER)	HOT <sup>1</sup>	Twy A, Twy A-1, Twy B, and Twy G complex intersection.
	HOT <sup>2</sup>	Twy A and southeast ramp, traffic congestion.
NAPA, CA NAPA COUNTY (APC)	HOT <sup>1</sup>	Twy A, Twy C, Twy E and the ramp.
	HOT <sup>2</sup>	Rwy 24, Twy A.
	HOT <sup>3</sup>	Rwy 24 and Rwy 36L.
OAKLAND, CA METROPOLITAN OAKLAND INTL (OAK)	HOT <sup>1</sup>	Rwy 27R, Twy A and Twy B.
	HOT <sup>2</sup>	Rwy 9L/27R, Twy H, Twy G, Twy C and Twy D.
	HOT <sup>3</sup>	Rwy 9L and Rwy 33, Twy J, Twy P, and Twy C, complex intersection.
SACRAMENTO, CA SACRAMENTO INTL (SMF)	HOT <sup>1</sup>	Rwy 16R/34L and Twy A-10
SALINAS, CA SALINAS MUNI (SNS)	HOT <sup>1</sup>	Rwy 31, Twy A and Twy E.
	HOT <sup>2</sup>	Rwy 26, Twy A and Twy C.
SAN FRANCISCO, CA SAN FRANCISCO INTL (SFO)	HOT <sup>1</sup>	Twy B, Twy J, and Twy F.
	HOT <sup>2</sup>	Rwy 1L/19R, Twy C and Twy E.
SAN JOSE, CA NORMAN Y. MINETA SAN JOSE INTL (SJC)	HOT <sup>1</sup>	Rwy 29 and Rwy 30L. Rwy 29 run-up area.

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CITY/AIRPORT	HOT SPOT	DESCRIPTION *
HAWTHORNE, CA JACK NORTHROP FIELD/ HAWTHORNE MUNI (HHR)	HOT <sup>1</sup>	Rwy 25 run-up area.
LONG BEACH, CA LONG BEACH (DAUGHERTY FLD) (LGB)	HOT <sup>1</sup>	Rwy 30 and Rwy 7L/25R, Twy A and Twy D.
	HOT <sup>2</sup>	Rwy 12/30 and Rwy 7L/25R, Twy B and Twy K.
	HOT <sup>3</sup>	Rwy 7R/25L, Twy B.
	HOT <sup>4</sup>	Rwy 7R/25L and Rwy 12/30, Twy J and Twy D.
	HOT <sup>5</sup>	Rwy 16R/34L, southwest ramp, Twy F and Twy B.
	HOT <sup>6</sup>	Rwy 34R and Rwy 7R/25L.
	HOT <sup>7</sup>	Rwy 12/30 cross every other rwy.
PALM SPRINGS, CA PALM SPRINGS INTL (PSP)	HOT <sup>1</sup>	Rwy 13R/31L and Rwy 13L/31R, Twy C.
	HOT <sup>2</sup>	Rwy 13R and Rwy 31R, Twy B and Twy C.
	HOT <sup>3</sup>	Rwy 31R, Twy B.
SANTA ANA, CA JOHN WAYNE ARPT-ORANGE COUNTY (SNA)	HOT <sup>1</sup>	Rwy 19L and Rwy 19R, Twy L and Twy K.
	HOT <sup>2</sup>	Rwy 19L and Rwy 19R, Twy H.
	HOT <sup>3</sup>	Twy A, Twy H, and Twy C.
SANTA BARBARA, CA SANTA BARBARA MUNI (SBA)	HOT <sup>1</sup>	Rwy 7/25, Twy C.
	HOT <sup>2</sup>	Rwy 15L and Rwy 15R, Twy C, wide pavement.
	HOT <sup>3</sup>	Rwy 15L/33R, Rwy 15R/33L, Rwy 7/25. Rwy 15L/33R and Rwy 15R/33L utilized for taxi.
	HOT <sup>4</sup>	Rwy 25, Twy H and Twy J.

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CITY/AIRPORT	HOT SPOT	DESCRIPTION *
LAS VEGAS, NV McCARRAN INTL (LAS)	HOT <sup>1</sup>	Rwy 01R/19L, Twy S and the ramp.
	HOT <sup>2</sup>	Rwy 01R/19L and Rwy 01L/19R, Twy U.
	HOT <sup>3</sup>	Rwy 01R/19L and Rwy 01L/19R, Twy Y.
	HOT <sup>4</sup>	Rwy 07L and Rwy 01L, co-located rwy holding position markings.
	HOT <sup>5</sup>	Twy E.
LAS VEGAS, NV NORTH LAS VEGAS (VGT)	HOT <sup>1</sup>	Rwy 07, Twy G and Twy F.
	HOT <sup>2</sup>	Rwy 12R, Twy G.
	HOT <sup>3</sup>	Rwy 12R, Twy A and Twy B.
	HOT <sup>4</sup>	Rwy 12L, Twy A.
MESA, AZ FALCON FIELD (FFZ)	HOT <sup>1</sup>	Rwy 04R/22L, Twy B and Twy D.
PHOENIX, AZ PHOENIX-MESA GATEWAY (IWA)	HOT <sup>1</sup>	Twy V, Twy B, and Twy K complex intersection.
PROVO, UT PROVO MUNI (PVU)	HOT <sup>1</sup>	Twy A and Twy A3 close proximity to ramp and rws.
RENO, NV RENO/TAHOE INTL (RNO)	HOT <sup>1</sup>	Rwy 07/25, Twy A and Twy B.
	HOT <sup>2</sup>	Twy C and the ramp.
	HOT <sup>3</sup>	Rwy 16L, Twy C and Twy D.
SALT LAKE CITY, UT SALT LAKE CITY INTL (SLC)	HOT <sup>1</sup>	Hold line on approach end of Rwy 32 protects Rwy 35.
	HOT <sup>2</sup>	Confusing intersection. Twy K2 ramp in close proximity to Rwy 17/35.
TUCSON, AZ RYAN FIELD (RYN)	HOT <sup>1</sup>	Rwy 33 and Rwy 06R, Twy B.
TUCSON, AZ TUCSON INTL (TUS)	HOT <sup>1</sup>	Twy A, Twy D and Twy A3, complex intersection.
	HOT <sup>2</sup>	Rwy 11L and Rwy 11R approach areas.
	HOT <sup>3</sup>	Rwy 29R and Rwy 29L.

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HOT SPOTS  
(CONTINUED)

CITY/AIRPORT	HOT SPOT	DESCRIPTION *
TOPEKA, KS FORBES FIELD (FOE)	HOT <sup>1</sup>	Twy A turns southwest to access the approach end of Rwy 3.
	HOT <sup>2</sup>	Twy A turns south to approach end Rwy 3. Not visible from tower.
TOPEKA, KS PHILIP BILLARD MUNI (TOP)	HOT <sup>1</sup>	Ramp area and twy intersection in close proximity to rwys.
WICHITA, KS WICHITA MID-CONTINENT (ICT)	HOT <sup>1</sup>	Confusing ramp exit/entrance.
	HOT <sup>2</sup>	Twy/rwy crossing.
	HOT <sup>3</sup>	Confusing twy/rwy intersection.

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HOT SPOTS  
(CONTINUED)

CITY/AIRPORT	HOT SPOT	DESCRIPTION *
KIRKSVILLE, MO KIRKSVILLE RGNL (IRK)	HOT <sup>1</sup>	Turf rwy taxi route via Rwy 18/36
MANSON CITY, IA MANSON CITY MUNI (MCW)	HOT <sup>1</sup>	Twy leads to multiple rwsy
ST JOSEPH, MO ROSECRANS MEMORIAL (STJ)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup>	Ramp in close proximity to rwy. Closely located rwsy. Back taxi required for full length Rwy 13.
ST LOUIS, MO LAMBERT-ST LOUIS INTL (STL)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup>	Twy D at intersection with Twy L in close proximity to Rwy 12R/30L. Approach end of Rwy 29 and Rwy 6 are in close proximity. Use Twy T to Rwy 29 and Twy A to Rwy 6. Approach end access to Rwy 12L, from FBO and cargo ramp, requires left turn on to Twy S.
ST LOUIS, MO ST LOUIS/SPIRIT OF ST LOUIS (SUS)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup>	Complex twy intersection. Blind spots on movement area. Blind spot on movement area.
SIOUX CITY, IA SIOUX GATEWAY/ COLONEL BUD DAY FIELD (SUX)	HOT <sup>1</sup> HOT <sup>2</sup>	Twy B intersects with Rwy 31 and Rwy 35 at the apch end of Rwy 35. Twy A and Twy G intersect inside of the Rwy 13/31 Rwy Safety Area.
SPRINGFIELD, MO SPRINGFIELD-BRANSON NATIONAL (SGF)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup>	Twys in close proximity to rwsy at unusual angles. Ramp exit crosses rwy. Twr blind spot on movement area.
WATERLOO, IA WATERLOO RGNL (ALO)	HOT <sup>1</sup> HOT <sup>2</sup> HOT <sup>3</sup> HOT <sup>4</sup>	Twy intersection near rwsy. Twy leads to multiple rwsy. Twy crosses rwy immediately after leaving ramp. Twy crosses to ANG Hangar and rwy.

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CLIMB/DESCENT TABLE 10042

INSTRUMENT TAKEOFF OR APPROACH PROCEDURE CHARTS												
RATE OF CLIMB/DESCENT TABLE												
(ft. per min)												
A rate of climb/descent table is provided for use in planning and executing climbs or descents under known or approximate ground speed conditions. It will be especially useful for approaches when the localizer only is used for course guidance. A best speed, power, altitude combination can be programmed which will result in a stable glide rate and altitude favorable for executing a landing if minimums exist upon breakout. Care should always be exercised so that minimum descent altitude and missed approach point are not exceeded.												
CLIMB/ DESCENT ANGLE (degrees and tenths)	ft/NM	GROUND SPEED (knots)										
		60	90	120	150	180	210	240	270	300	330	360
2.0	210	210	320	425	530	635	743	850	955	1060	1165	1275
2.5	265	265	400	530	665	795	930	1060	1195	1325	1460	1590
VERTICAL PATH ANGLE	2.7	287	287	430	574	717	860	1003	1147	1290	1433	1576
	2.8	297	297	446	595	743	892	1041	1189	1338	1486	1635
	2.9	308	308	462	616	770	924	1078	1232	1386	1539	1693
	3.0	318	318	478	637	797	956	1115	1274	1433	1593	1752
	3.1	329	329	494	659	823	988	1152	1317	1481	1646	1810
	3.2	340	340	510	680	850	1020	1189	1359	1529	1699	1869
	3.3	350	350	526	701	876	1052	1227	1402	1577	1752	1927
	3.4	361	361	542	722	903	1083	1264	1444	1625	1805	1986
	3.5	370	370	555	745	930	1115	1300	1485	1670	1860	2045
	4.0	425	425	640	850	1065	1275	1490	1700	1915	2125	2340
	4.5	480	480	715	955	1195	1435	1675	1915	2150	2390	2630
	5.0	530	530	795	1065	1330	1595	1860	2125	2390	2660	2925
	5.5	585	585	880	1170	1465	1755	2050	2340	2635	2925	3220
	6.0	640	640	960	1275	1595	1915	2235	2555	2875	3195	3510
	6.5	690	690	1040	1385	1730	2075	2425	2770	3115	3460	3805
	7.0	745	745	1120	1490	1865	2240	2610	2985	3355	3730	4105
	7.5	800	800	1200	1600	2000	2400	2800	3200	3600	4000	4400
	8.0	855	855	1280	1710	2135	2560	2990	3415	3845	4270	4695
	8.5	910	910	1360	1815	2270	2725	3180	3630	4085	4540	4995
	9.0	960	960	1445	1925	2405	2885	3370	3850	4330	4810	5295
	9.5	1015	1015	1525	2035	2540	3050	3560	4065	4575	5085	5590
	10.0	1070	1070	1605	2145	2680	3215	3750	4285	4820	5355	5890

CLIMB/DESCENT TABLE 10042

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